INSTALLATION INSTRUCTIONS

GEO TRIO
COUNTERFLOW
HEATER ACCESSORY

Models:

GTCFHK1-A10	10 KW Counterflow Heater Accessory
GTCFHK1-A20	20 KW Counterflow Heater Accessory

This accessory heater is only to be applied along with Bard Model GTA____UD1-A Coil + GTB1-A Blower Section + GTC__S2-AD_X Compressor Section as an add-on counterflow heater.

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Bryan, Ohio 43506

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ANSI Z535.5 Definitions:

Danger: Indicate[s] a hazardous situation which, if not avoided, will result in death or serious injury. The signal word "DANGER" is to be limited to the most extreme situations. DANGER [signs] should not be used for property damage hazards unless personal injury risk appropriate to these levels is also involved.

Warning: Indicate[s] a hazardous situation which, if not avoided, could result in death or serious injury. WARNING [signs] should not be used for property damage hazards unless personal injury risk appropriate to this level is also involved.

Caution: Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION [signs] without a safety alert symbol may be used to alert against unsafe practices that can result in property damage only.

Notice: [this header is] preferred to address practices not related to personal injury. The safety alert symbol shall not be used with this signal word. As an alternative to "NOTICE" the word "CAUTION" without the safety alert symbol may be used to indicate a message not related to personal injury.

⚠DANGER

⚠WARNING

⚠CAUTION

NOTICE

⚠ CAUTION

All geothermal equipment is designed for indoor installation only. Do not install or store unit in a corrosive environment or in a location where temperature and humidity are subject to extremes. Equipment is not certified for outdoor applications. Such installation will void all warranties.

⚠ WARNING

Use care and wear appropriate protective clothing, safety glasses and protective gloves when servicing unit and handling parts.

Failure to follow this warning may result in personal injury.

⚠ DANGER

Before drilling or driving any screws into cabinet, check to be sure screw will not hit any internal parts, refrigerant lines, water lines or electrical wires/components.

DESCRIPTION OF EQUIPMENT

The GTCFHK1-A** Counterflow Electric Heater Assembly is only to be applied along with Bard Model GTA____UD1-A Coil + GTB1-A Blower + GTC__S2-AD_X Compressor Section models as an add-on counterflow heater. It is a self-contained package that includes the entire electric heat workings, along with the circuit breaker(s), installation instructions and wiring diagrams.

NOMENCLATURE

GTCFHK 1 - A 10

- GTCFHK — Geo Trio Counterflow Heater Kit
- 1 — Revision
- A — Electrical
  A = 240/208V - 1PH
- 10 — Nominal KW
  10 = 10 KW
  20 = 20 KW

EQUIPMENT THIS HEATER PACKAGE IS TO BE INSTALLED IN COMBINATION WITH:

INDOOR COIL	+	BLOWER SECTION	+	COMPRESSOR SECTION
GTA3600UD1-A		GTB1-A		GTC36S2-AD*X
GTA4860UD1-A				GTC48S2-AD*X
				GTC60S2-AD*X

* C = Copper Coaxial Coil
N = Cupro Nickel Coaxial Coil

⚠ WARNING

Fire hazard.

Install this heater only in combination with the equipment listed above.

Installing this heater in any combination other than what is listed above could result in fire causing damage, injury or death.

			Single Circuit		Dual Circuit	
Model	Volts	Phase	MCA	MOP	MCA	MOP
GTCFHK1-A10	240/208	1	50	50	--	
GTCFHK1-A20	240/208	1	100	100	50/50	50/50

Model	Volts	Phase	Nominal KW	Nominal BTUH
GTCFHK1-A10	240/208	1	9.6/7.2	32,765/24,575
GTCFHK1-A20	240/208	1	19.2/14.4	65,530/49,150

FIGURE 1
Assembled System with Counterflow Heat

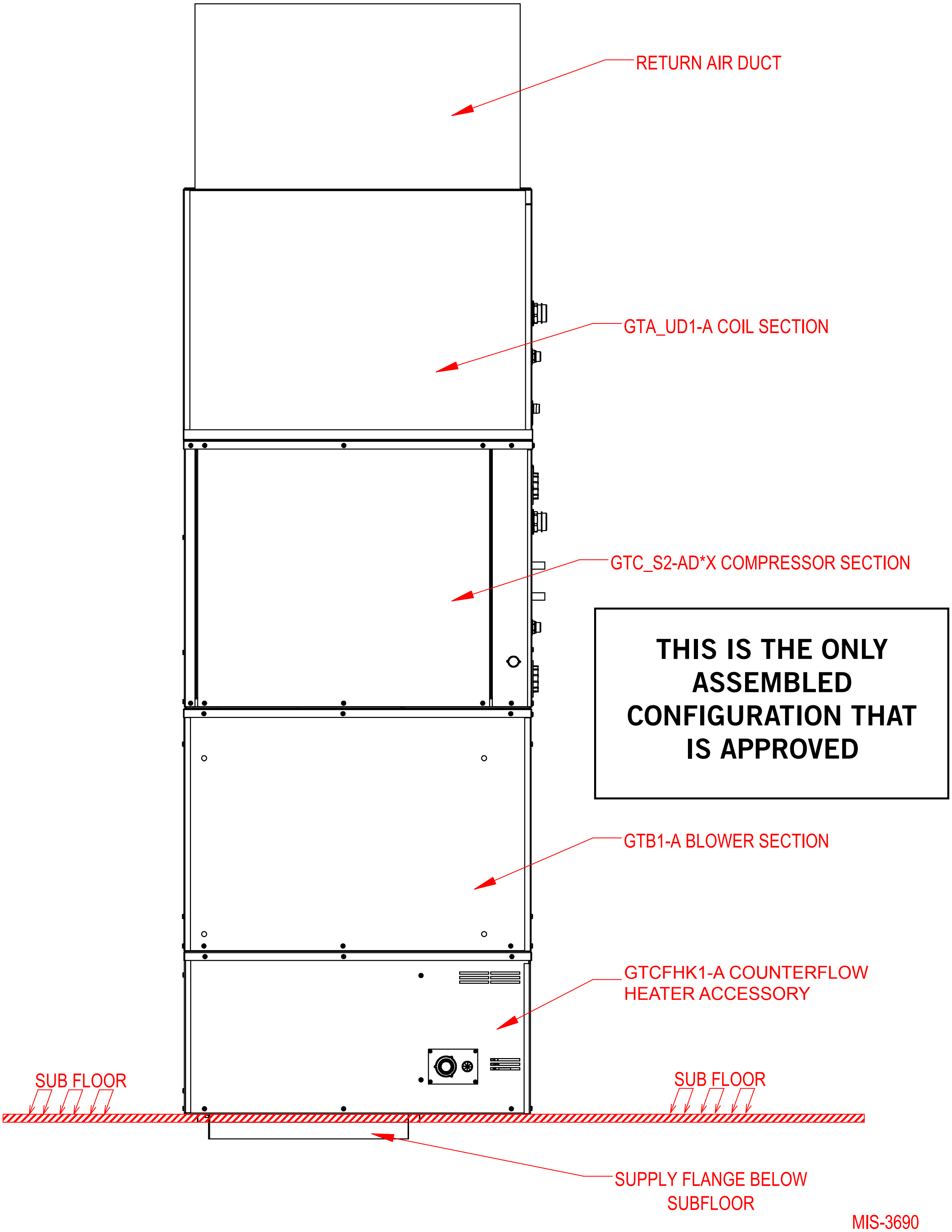
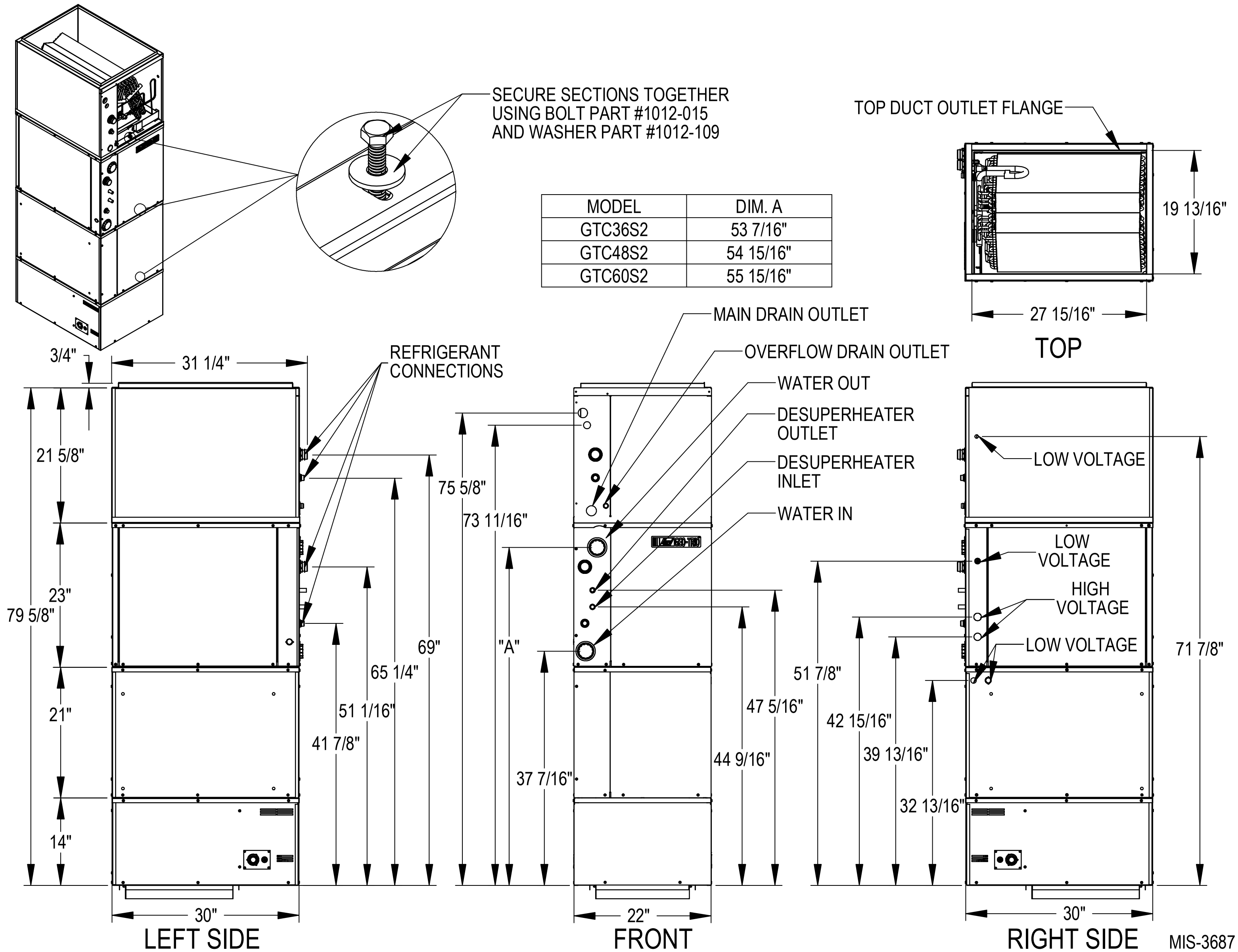


FIGURE 2
Assembled Dimensions



MODEL	DIM. A
GTC36S2	53 7/16"
GTC48S2	54 15/16"
GTC60S2	55 15/16"

GENERAL INFORMATION

GENERAL

Each unit is shipped internally wired, requiring line power and 24V thermostat inputs.

These instructions and any instructions packaged with any separate equipment required to make up the entire heat pump system should be carefully read before beginning the installation. Note particularly any tags and/or labels attached to the equipment.

While these instructions are intended as a general recommended guide, they do not in any way supercede any national and/or local codes. Authorities having jurisdiction should be consulted before the installation is made.

SHIPPING DAMAGE

Upon receipt of equipment, the carton should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent.

APPLICATION

Capacity of the unit for a proposed installation should be based on heat loss calculations made in accordance with methods of Air Conditioning Contractors of America. The piping and electrical systems should be installed in accordance all local, state and federal requirements.

LOCATION

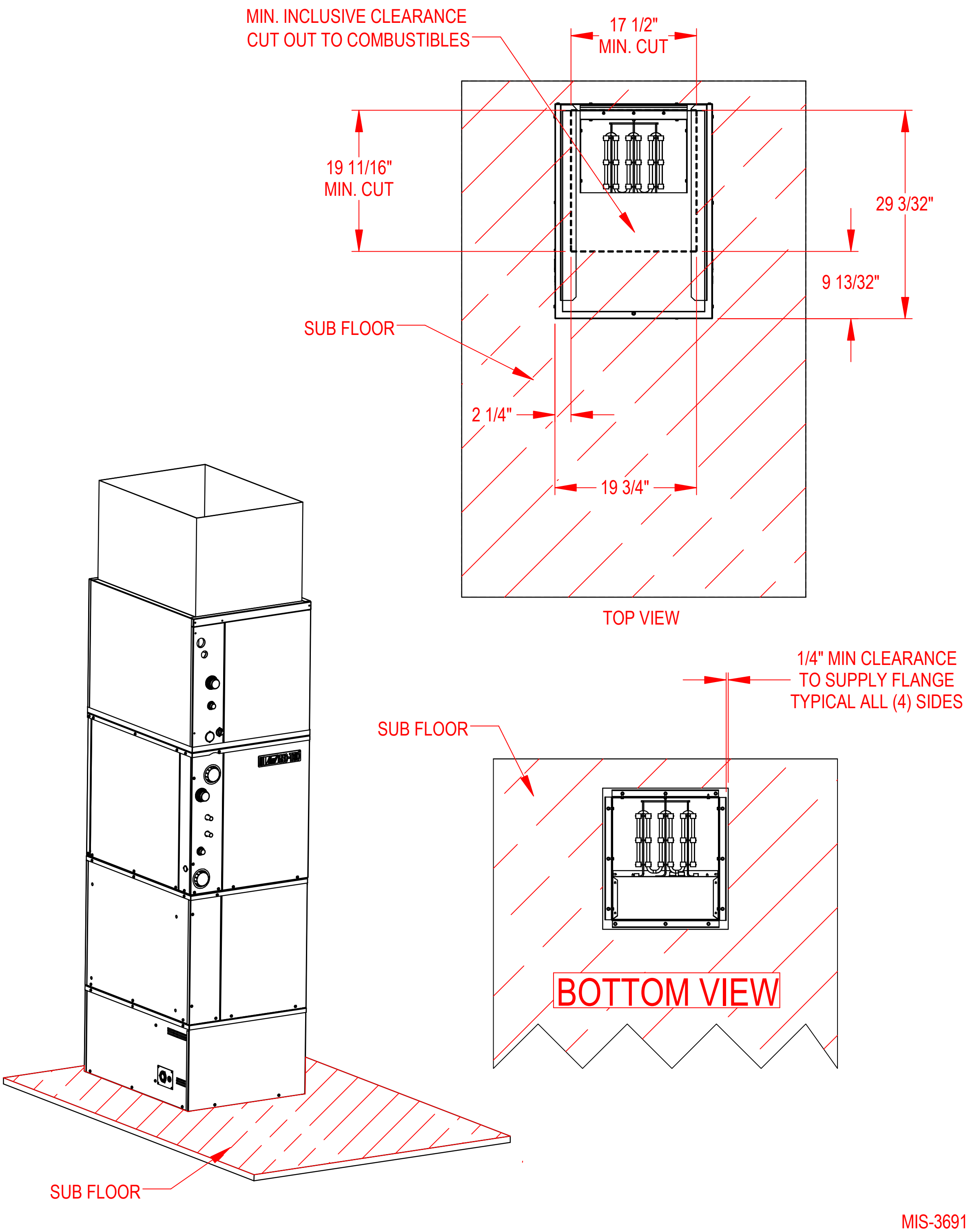
The complete assembled unit may be installed in a closet or utilility room provided adequate service access is ensured, and equipment won't freeze.

These units are not approved for outdoor installation and therefore must be installed inside structure being conditioned. ***Do not locate in areas subject to freezing in the winter or sweating in the summer.***

Prior to setting the assembled unit, consider ease of piping and electrical connections for the unit. For units which will be used with a desuperheater, consider the proximity of the unit to the water heater or storage tank. Place the unit on a solid base, preferably concrete, to minimize undesirable noise and vibration. DO NOT elevate the base pan on rubber or cork vibration eliminator pads as this will permit the unit base to act like a drum, transmitting objectionable noise.

DUCT INSTALLATION

FIGURE 3
Supply Duct Floor Penetration



POWER AND CONTROL WIRING

High Voltage LIne Supply

This accessory item requires a separate line power circuit from the main unit. The minimum circuit ampacity and maximum overcurrent protection ratings are listed on the heater serial plate.

A high voltage line supply entrance is available on both sides of the heater box (a triple knockout). Route the properly sized conduit and wire sizes through whichever side best fits the application, and route wiring internal of the box behind the contactors and land on the circuit breakers on the left hand side of the compartment.

Low Voltage Control Wires

A junction point for low voltage connections is supplied with this accessory. A short piece of thermostat wire will need to be supplied and conjoined with low voltage wires using supplied blue wire nuts.

A low voltage entrance is available on both sides of the heater box (a finger grommet). Route the field-supplied thermostat wire through whichever side best fits the application. Route the thermostat wire to the front side of the control platform and connect to supplied wires with supplied blue wire nuts (see Figure 4).

Model GTCFHK1-A10 requires a 2-conductor thermostat wire that will run between the GTH1 heater accessory and the GTB1-A blower section for low voltage connections. Land the low voltage wires in the GTB1-A blower section on the blower control board screw terminals in the designated location/signal (see Figure 5).

Model GTCFHK1-A20 requires a 4-conductor thermostat wire that will run between the GTH1 heater accessory and the GTB1-A blower section for low voltage connections. Land the low voltage wires in the GTB1-A blower section on the blower control board screw terminals in the designated location/signal (see Figure 6 on page 10).

FIGURE 4
Field Wire Entry and Routing

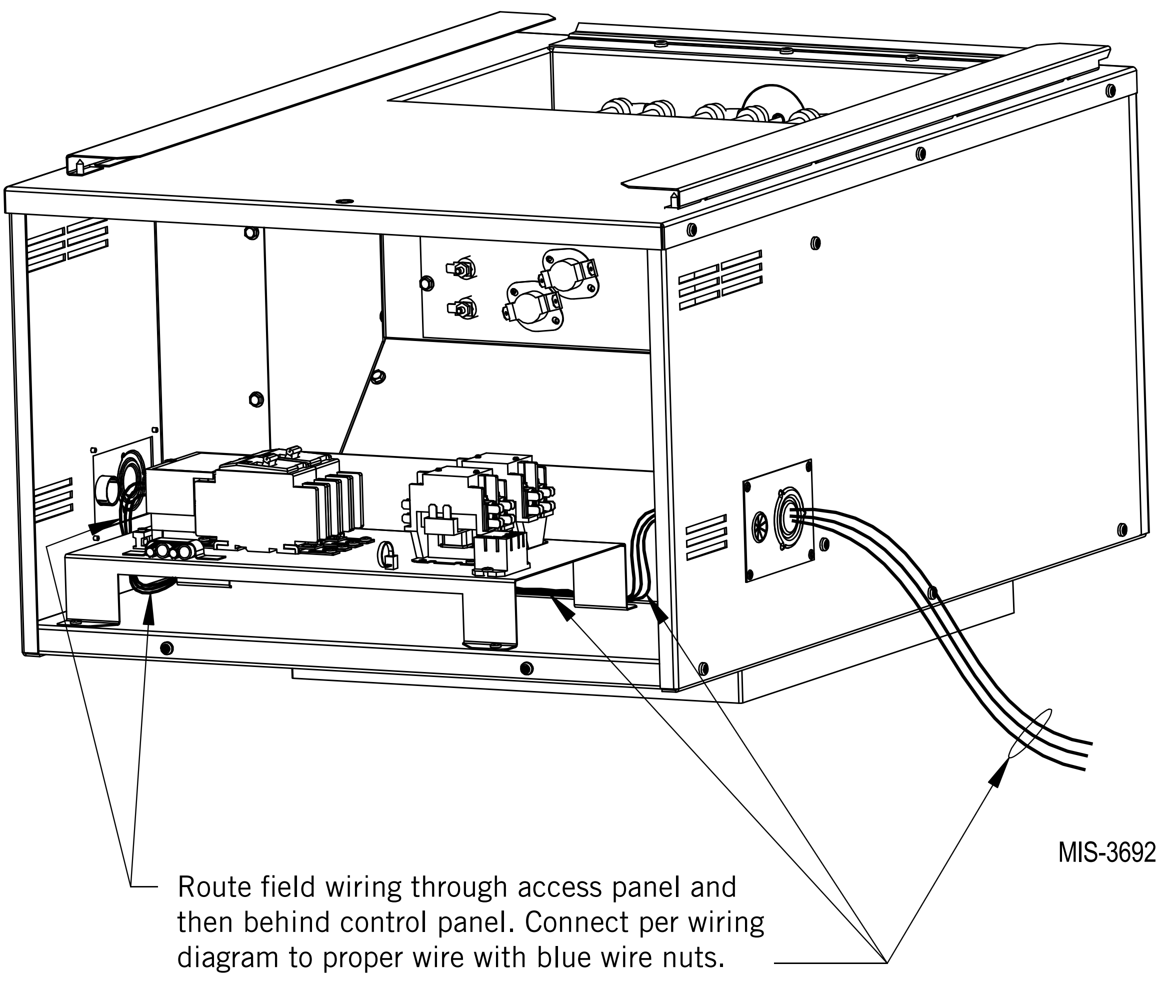


FIGURE 5
GTCFHK1-A10 Wiring Diagram

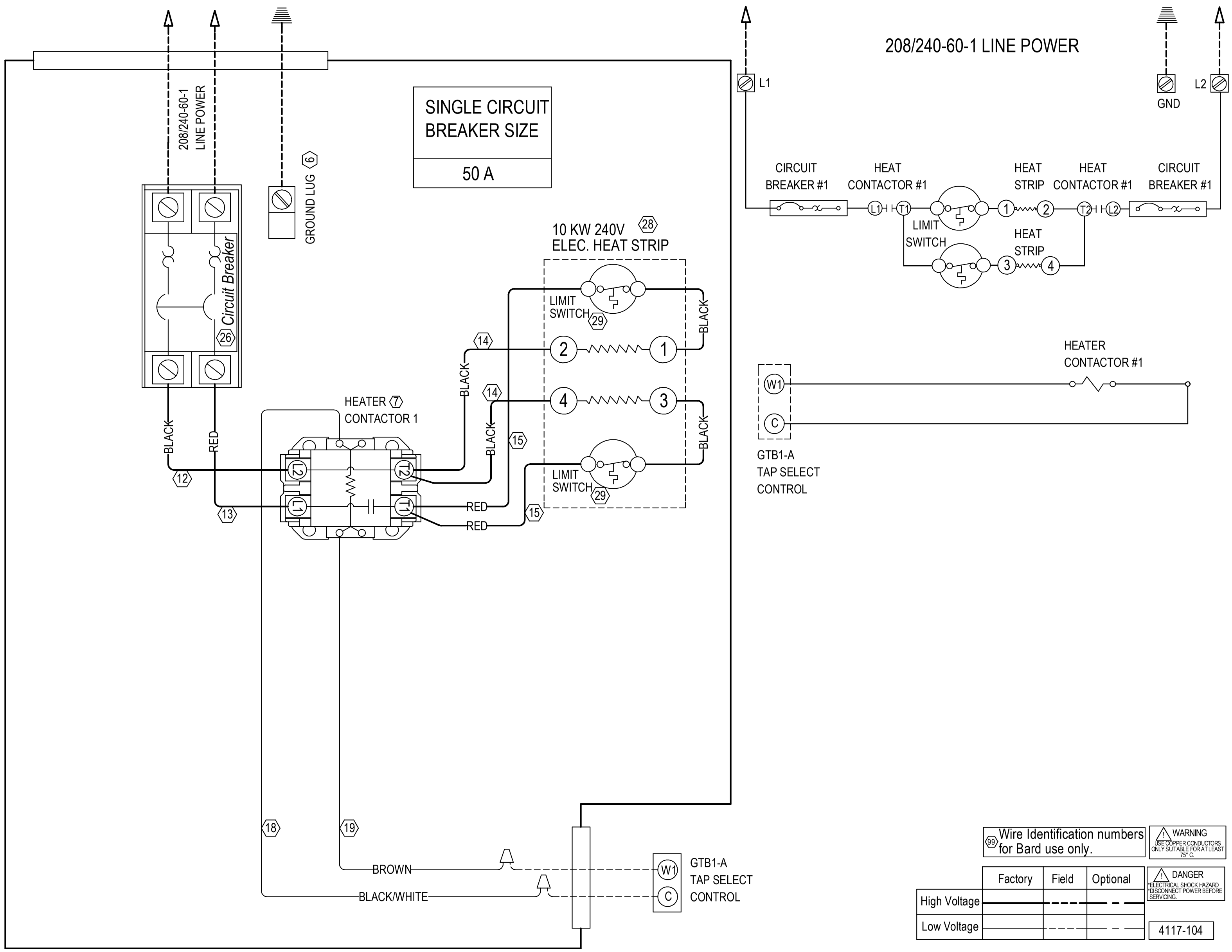
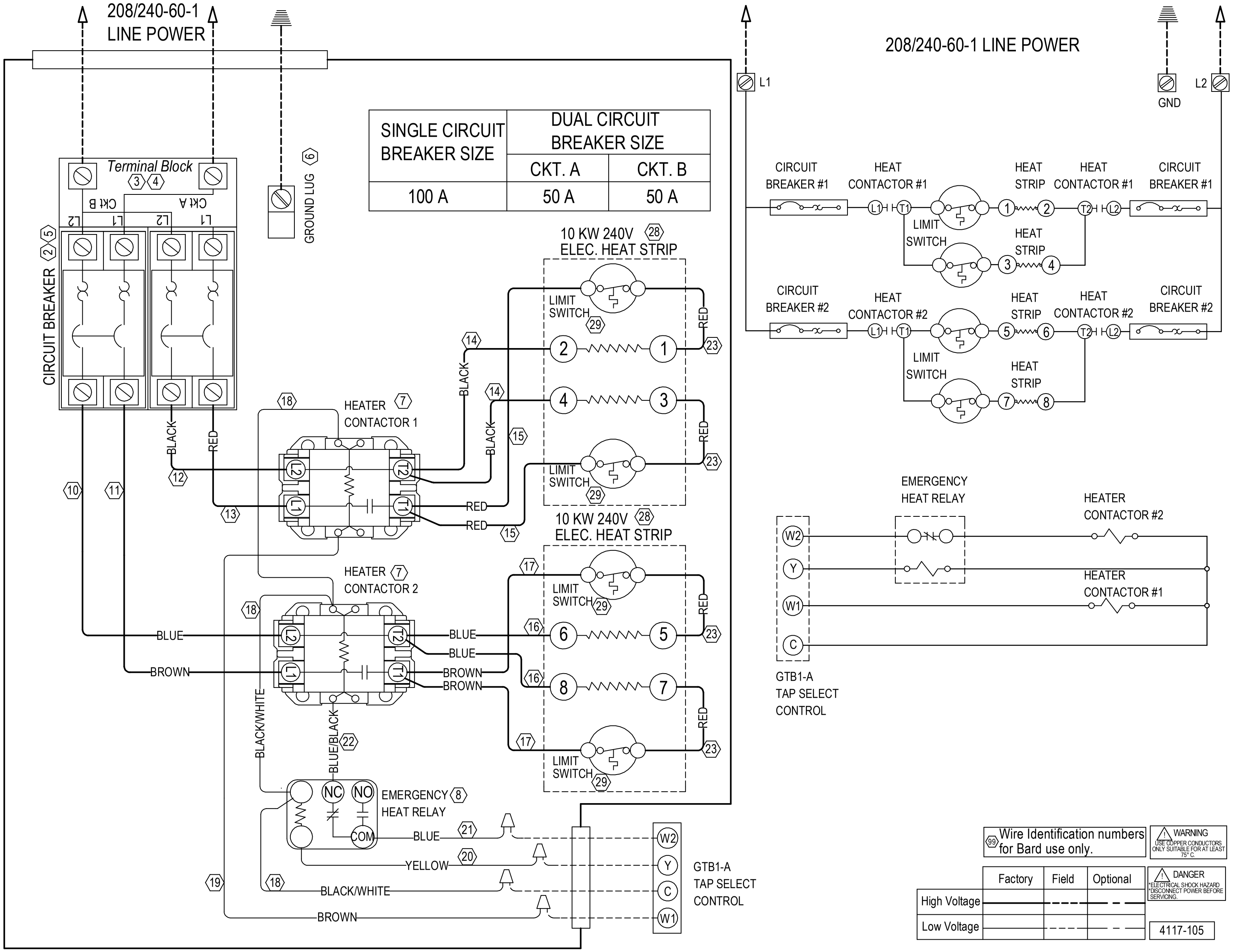
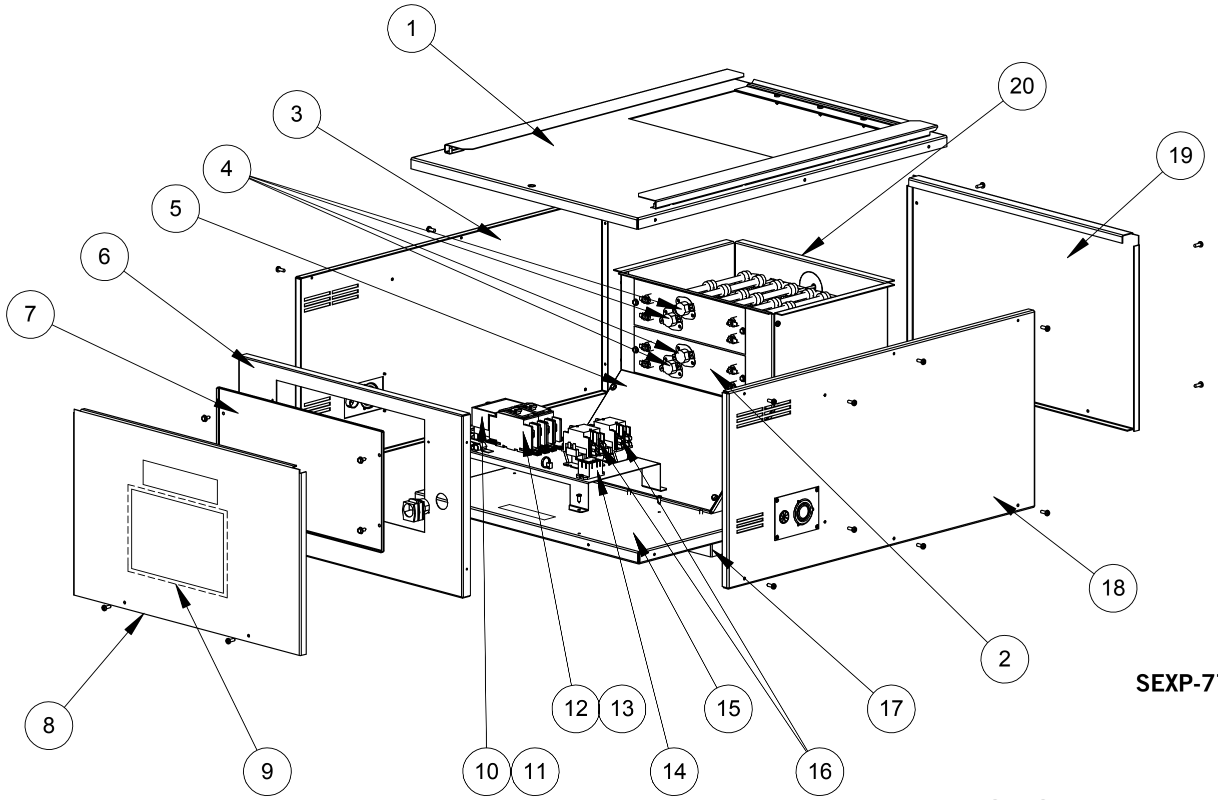


FIGURE 6
GTCFHK1-A20 Wiring Diagram



SINGLE CIRCUIT BREAKER SIZE	DUAL CIRCUIT BREAKER SIZE	
	CKT. A	CKT. B
100 A	50 A	50 A



SEXP-773

Drawing No.	Part No.	Description	GTCFHK1-A10	GTCFHK1-A20
1	S507-299-1	Top Assembly	1	1
2	8604-104	Heat Strip 9.6KW	1	2
2	136-360	Zero KW Blank Off Plate	1	0
3	S501-745-1	Left Side	1	1
4	8402-188	Limit Control 150-105 Line Break	2	4
5	515-262	Heater Box Front	1	1
6	533-244	Control Partition	1	1
7	553-574	Heater Access Cover	1	1
8	S153-574-1	Front Service Door	1	1
9	4117-104	Wiring Diagram	1	0
9	4117-105	Wiring Diagram	0	1
10	8615-047	Jumper Bar Base 4 Pole	0	1
11	8615-049	Jumper Bar Cover 4 Pole	0	1
12	8615-057	Circuit Breaker Mounting Foot	1	2
13	8615-040	Circuit Breaker, 50A, 2 Pole	1	2
14	8201-130	Relay, SPDT, Pilot Duty	0	1
15	527-446	Base	1	1
16	8401-025	Contactor 2 Pole 50 Amp Resistive	1	2
17	113-213	Duct Flange	2	2
18	S501-744-1	Right Side	1	1
19	509-287-1	Back	1	1
20	117-344	Heater Box Wrapper	1	1